

## ABSTRACT

An automated docking system for space vehicles that includes a plurality of antennas on each of a target vehicle and a chase vehicle. A pseudo random code is transmitted via one  
5 of the antennas located on one of the vehicles and received by one of the antennas located on the other vehicle. The pseudo random code is then sent back to the original vehicle via transmissions from the plurality of antennas on the second vehicle and received by the plurality of antennas on the original vehicle. The distance from each of the antennas on the other vehicle to each of the antennas on the originating vehicle can be measured in this  
10 fashion. The antennas on each of the vehicles are located in a spaced-apart arrangement so that the angular orientation or attitude of each of the vehicles to each other can also be determined. A plurality of video cameras is provided on the exterior of one of the vehicles and video information from these cameras is transmitted to the other vehicle for display to operators in that vehicle. Commands between the vehicles can also be communicated.

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